



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/982,813

10/22/2001

Stephen N. Phillips

032732-002

8278

21839

7590

05/18/2004

BURNS DOANE SWECKER & MATHIS L L P
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER

CURTIS, CRAIG

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/982,813

Applicant(s)

PHILLIPS ET AL.

Examiner

Craig Curtis

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22, 30 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22, 30, and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Detailed Action

Disposition of the Instant Application

- This Office action is responsive to Applicant's Amendment filed on 17 February 2004.
- By this amendment, Applicant has amended claim 1.
- Claims 1-22, 30, and 31 presently are pending in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-11, 14-19, 21, 22, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodard et al. (6,034,813) in view of Lipp (3,907,727).**

With regard to claim 1, Woodard et al. disclose (see Figs. 5, 8, & 9) the invention as claimed—[a] solar-control film comprising:

- a) an adhesive layer (42: col. 5, ll. 13-21) for adhering said solar control film to a substrate (id, 40);
- b) one or two metallized layers (see 50 in Fig. 5; 50 & 58 in Fig. 8; and 50 & 80 in Fig. 9); and
- c) a scratch-resistant layer (hardcoat 54 in Figs. 5, 8, & 9), wherein the one or two (one, in this case) said metallized layer is between said adhesive layer (42) for adhering to a

substrate and said scratch-resistant layer (see hardcoat 54 in Figs. 5, 8, & 9)-- **EXCEPT FOR** an additional teaching wherein said scratch-resistant layer contains dispersed carbon black particles.

Lipp, however, provides an explicit teaching of preparing acrylate sheets containing dispersed carbon black particles (see col. 1, ll. 12-22), it being noted that such acrylate sheets can reasonably be viewed as satisfying Applicants' *scratch-resistant layer* recitation. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the hardcoat (*read: scratch-resistant*) layer of Woodard et al. such that it further comprise dispersed carbon black particles, motivated by the explicit teaching by Lipp of dispersing carbon black in acrylate sheets, for at least the purpose of minimizing haze.

With regard to claim 2, the combination explicitly teaches wherein said adhesive layer comprises a pressure-sensitive adhesive (*viz.*, PSA 42: col. 5, ll. 15-17).

With regard to claim 3, Applicants concede that other types of adhesives are well-known in the art (see p. 9, ll. 1-3 of the Specification); and thus the use of any such art-recognized equivalent adhesive(s) (e.g., a dry adhesive) would certainly have been obvious to one having ordinary skill in the art at the time the invention was made.

With regard to claim 4, releasable liners are notoriously old and well-known in the solar control film prior art (recall releasable liner 42 in Fig. 1 of Maschwitz et al., asserted in the previous Office Action; also see col. 7, ll. 10-12 therein), and such would have been an obvious design choice to one having ordinary skill in the art at the time the invention was made.

With regard to claim 5, the combination further discloses wherein said metallized layer is comprised of aluminum (Woodard et al., col. 6, ll. 31-45) deposited on a polymeric substrate (*viz.*, PET 52: col. 6, ll. 50-53).

With regard to claim 6, the combination further discloses wherein said polymeric substrate comprises polyethylene terephthalate (PET: see, e.g., col. 5, ll. 30-32).

With regard to claims 7 & 8, the combination discloses wherein said scratch-resistant layer respectively comprises from about 1 to about 10 % or from about 2 to about 3 % by weight of said carbon black particles. See Lipp: col. 2, ll. 32-37.

With regard claims 9 & 10, the combination discloses the claimed invention as set forth above **EXCEPT FOR** an explicit teaching wherein the carbon black particles have an average particle size in the range of from about 0.2 to about 5.0 microns or from about 0.2 to about 0.5 microns. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have fabricated the solar control film of the combination such that its carbon black particles have an average particle size in the recited ranges, for at least the purpose of achieving a desired optical performance, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With regard to claim 11, the combination expressly discloses wherein said scratch-resistant layer (read: hardcoat) comprises acrylic resin. See Woodard: col. 6, ll. 60-62.

With regard to claims 14 & 15, the combination discloses the claimed invention as set forth above, including wherein said scratch-resistant layer has a thickness from 1 μm to 20 μm (See Woodard et al.: col. 6, ll. 63-64) **EXCEPT FOR** explicit teachings wherein said scratch-resistant layer has, respectively, a thickness in the range of from about 0.5 to 3.0 microns or in the range of from about 0.8 to about 1.8 microns (the later range arguably being encompassed by the "...thickness from 1 μm to 20 μm " teaching by the combination). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have fashioned said scratch-resistant layer of the solar control film of the combination such that it have a thickness in the range of about 0.5 to about 3.0 microns or in the range of from about 0.8 to about 1.8 microns--the lower limit (i.e., a thickness of about 0.5 microns) of the first range being explicitly taught by the combination and the upper limit (i.e., about 3.0 microns) being

within a factor of 2 of the teaching by the combination of a thickness of same being about 1.5 microns; and the second range being, as set forth above, arguably met by the combination--for at least the purpose of providing adequate scratch resistance, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With regard to claim 16, the combination discloses wherein said solar control film has both a visible light transmittance of from about 10% to about 80% (Woodard et al.: col. 9, ll. 1-67—col. 10, ll. 1-13) and a visible light reflection of from about 0% to about 8% (*id.*).

With regard to claim 17, the combination discloses wherein said solar control film has a haze of less than about 7%. See Lipp: col. 5, ll. 38-40; col. 6, ll. 58-59 (*i.e.*, claim 10).

With regard to claims 18 & 19, the combination discloses wherein said solar control film of claim 1 further comprises a polymeric film between the adhesive layer (42) and the metallized layer (50): namely, layers 44 & 52 in Woodard et al., polyethylene ethylene terephthalate being a well-known polymeric material.

With regard to claim 21, the combination discloses a plurality (read: two or more) of metallized layers. (See metallic layers 50 & 58 in Fig. 8, and 50 & 80 in Fig. 9).

With regard to claim 22, the combination explicitly discloses wherein a polymeric film (PET) is located between adjacent metallized layers (see Fig. 9 in Woodard et al.).

With regard to claims 30 and 31, please refer to the rejection of relevant subject matter set forth hereinbefore.

2. **Claims 12 & 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodard et al. (6,034,813) in view of Lipp (3,907,727), as applied above to claim 1, and further in view of Döhler et al. (4,978,726).**

The combination discloses the claimed invention as set forth above **EXCEPT FOR** an explicit teaching wherein said acrylic resin is respectively prepared from a mixture of

pentaerythritol triacrylate ester and pentaerythritol tetraacrylate ester or a mixture of pentaerythritol tetraacrylate ester, pentaerythritol triacrylate ester, and an acrylated epoxy compound. Döhler et al., however, disclose the preparation of acrylic resin from pentaerythritol esters--specifically pentaerythritol triacrylate and pentaerythritolmethacrylate--such esters, in addition to acrylated epoxy compounds, being well-known in the prior art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have prepared the acrylic resin of the scratch-resistant layer of the solar control film of the combination from the above-recited mixtures, the critically of one or the other over each other not having been disclosed, for at least the purpose of achieving a desired robustness in said scratch-resistant layer.

3. **Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Woodard et al. (6,034,813) in view of Lipp (3,907,727), as applied above to, inter alia, claims 1, 18, and 19, and further in view of Ojeda (6,120,901).**

The combination discloses the claimed invention as set forth above **EXCEPT FOR** an explicit teaching wherein said polymeric film includes an ultraviolet absorbent. Ojeda, however, provides an explicit teaching wherein a polymeric film includes an ultraviolet absorbent. See, e.g., col. 1, ll. 63-67. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the solar control film of the combination such that its polymeric film(s) include an ultraviolet absorbent, as explicitly taught by Ojeda, for at least the purpose of forestalling degradation of said solar control film over time as a result of the photooxidation of same by UV light.

Response to Arguments

4. Applicants' arguments with respect to the claims have been considered, but they have not been found to be persuasive.

Applicants initially argue that “[n]either *Woodard et al.*, taken alone, or in combination with *Lipp*, disclose or suggest the features required by the presently claimed invention.” For the reasons set forth in detail below, the Examiner respectfully disagrees.

As previously conceded by the Examiner and presently noted by Applicants, *Woodard et al.* do not in fact disclose a teaching wherein scratch-resistant layer 54 (in Figs. 5, 8, & 9) of its solar control film contains carbon black particles. As set forth in the previous Office Action, however, the *Lipp* reference was relied upon to meet this teaching. In response, however, Applicants’ have asserted that *Lipp*, the secondary reference relied upon by the Examiner for disclosing this feature, “...makes no mention of dispersing carbon black in a scratch resistant layer of a composite solar control film that includes one or two metallized layers and an adhesive layer.” This line of argument ultimately is unavailing, however, because the *Lipp* reference need not explicitly disclose any additional structural elements beyond that of a scratch-resistant layer in which carbon black particles have been dispersed.

More specifically, **the *Lipp* reference was not relied upon for a teaching of dispersing carbon black in a scratch resistant layer of a composite solar control film that includes one or two metallized layers and an adhesive layer, but instead solely for its teaching of a scratch-resistant layer in which carbon black particles had been dispersed**, because the “...*composite solar control film that includes one or two metallized layers and an adhesive layer*...” structural limitations had already been met by the disclosure of same by the primary *Woodard et al.* reference. Indeed, *Lipp* was relied upon **solely** for its teaching of an acrylate plastic hardcoat (read: scratch-resistant) layer in which carbon black particles had been dispersed. Moreover, the very fact that *Lipp* was used as a secondary reference in an

obviousness-type (i.e., a 35 U.S.C. §103(a)) rejection--as opposed to its having been used as the sole reference in an lack of novelty-type (i.e., 35 U.S.C. §102) rejection—was meant to signal the fact that Lipp was not being relied upon to teach *each and every element* of the instant invention.

Still more specifically, the Examiner's reliance upon the above-recited teaching by the secondary reference, Lipp, of a scratch-resistant layer in which carbon black particles are dispersed is entirely consistent with the general goal of obviousness-type rejections: the reliance upon analogous teachings by prior art references other than the primary reference to meet limitations recited in the claims of an instant application that could not be met by relying upon a single prior art reference.

Applicants' further assert that there was absolutely no motivation to include the feature of dispersing carbon black into the hardcoat layer of Woodard et al., and that the complex solar control film in Woodward et al. already addressed the problem of light transmittance, having resolved its problem [sic] through a complex composite of layers. In addition, Applicants assert that Woodard et al. disclose wherein a hard coat layer is described as not being critical to the invention. Each of these assertions will now be addressed in turn.

Lipp discloses that its acrylate sheet tinted with carbon black (read: scratch-resistant hardcoat layer in which carbon black particles have been dispersed) provides a sheet that is optically transparent and free of haze. See abstract. The Examiner contends that it was in no way inconsistent with Woodard et al.'s overall teaching of controlling visible light transmission (see Abstract) to replace the hardcoat layer taught in the solar control film of Woodard et al. with that of the acrylate hardcoat sheet tinted with carbon black taught by Lipp. After all, Lipp

discloses wherein its acrylate hardcoat sheet is optically transparent and substantially free of haze, and Woodard et al. expressly discloses wherein its hardcoat layer can be "...any one of known materials, such as silica-based hardcoats, siloxane hardcoats, melamine hardcoats, *acrylic hardcoats*, and the like." Col. 6, ll. 60-62 (*emphasis added*). And the fact that Woodard et al. disclose wherein said hard coat is not critical to the invention should not be interpreted as foreclosing the utilization, if so desired, of a hardcoat layer.

With regard to Applicants' assertion, with respect to independent claim 39, that neither Woodard et al. nor Lipp disclose the feature of a solar control film having a visible light transmittance of about 10% to about 80%, a visible light reflection of about 0% to about 8%, and a haze of less than about 7%, Applicants are respectfully directed to Fig. 10 in Woodard et al., and to the teaching by Lipp wherein said acrylate hardcoat sheet taught therein being substantially free of haze (it being noted that Woodard et al. is silent with respect to haze values).

Conclusion

5. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be


Art Unit: 2872

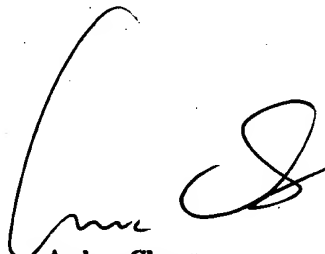
calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig Curtis, whose telephone number is (571) 272-2311. The centralized facsimile phone number for the USPTO is (703) 872-9306.

Any inquiry of a general nature regarding the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-0956.


Craig H. Curtis
Group Art Unit 2872
12 May 2004


Audrey Chang
Primary Examiner
Technology Center 2800